

REMARKS

Claims 30-48 are active and correspond to the elected subject matter.

Claim 30 is a re-presentation of Claims 15 and 20. Claims 31-48 find support in Claims 16-19 and 21-27.

Responding to the Notice of April 18, 2011, the claims are amended to cancel all previous pending claims and replace them with new claims that combine various claims as noted above.

The specification is amended to insert a section referencing the earlier application to which priority is claimed.

No new matter is added.

The rejection of Claim 24 is no longer applicable in light of the cancellation of this claim.

The claims directed to the process of manufacturing a substrate that involves depositing a coating layer of a hydrophobic agent onto a surface of a silicon containing mineral layer when the surface is in the activated state. The activated state is defined on page 3, lines 17-28 of the specification and also presented in Claim 30 submitted herein. The specification describes that the hydrophobic properties can be further improved when applying the agent to the surface in the activated state. The specification provides comparative data which compares the presence or absence of the activated state achieved by etching the silicon containing sub-layer.

In the Official Action, the Examiner has rejected Claims 15-17, 22 and 24 as anticipated in view of EP 0476510 to Uemura or Chartier (US 5,800,918). As Claim 20 was not rejected in either rejection and Claim 30 combines Claims 15 and 20, these rejections can be withdrawn.

In addition, the obviousness rejections of Claim 18 citing either Uemura or Chartier (see page 7-8 of the Official Action), the rejection of Claim 19 combining Chartier with Suzuki (US Pub. 2001/0048981), the rejection of Claims 22 and 23 citing Uemura with Lopata (US 5,487,920), the rejection of Claims 25-27 citing Uemura and Combes (US 5,656,559), and the rejection of Claims 25-27 citing Chartier with Combes are also no longer applicable in view of the presentation of Claim 30, which combines limitations from Claims 15 and 20.

The remaining rejection is of Claims 20 and 21 under 35 USC 103(a) in view of Uemura and Okudaria (US 4,330,384). See the Official Action at pages 8-9. In this rejection the Examiner recognizes that Uemura does not teach the activation treatment defined in Claim 20 but reaches into the Okudaria method of plasma etching arguing that it would have been obvious to apply that method from Okudaria in the method of Uemura for some unstated purpose.

The rejection cannot be upheld because the examiner's statements are merely unsupported allegations that are not based on objective evidence or acceptable scientific reasoning. Obviousness rejections must be based on objective evidence of record. Cf. In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002) (“ ‘The factual inquiry whether to combine references must be thorough and searching.’ ...It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with.”).

The Examiner has not established that the Uemura would have been modified with Okudaira as alleged in the rejection. More specifically, the Examiner has not explained when, how, or why Uemura's deficient disclosure reasonably would have taught a person having ordinary skill in the art to employ plasma etching from Okudaira.

Uemura does not recognize any problems that Applicants' invention remedies (see Specification pages 2-3). Moreover, the Examiner has not pointed to any knowledge or skill in the prior art which would have led a person having ordinary skill in the art to use plasma etching in Uemura's teachings for any purpose.

The Office has the initial burden of proof to establish the prima facie obviousness of the subject matter Applicants claim in view of the prior art teaching. *In re Fritch*, 972 F.2d 1260, 1265 (Fed. Cir. 1992); *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). Absent evidence which supports a rejection of the subject matter Applicants claim for obviousness, the Examiner's conclusion that Applicants' claims are unpatentable under 35 U.S.C. §103(a) cannot be sustained.

Furthermore, Applicants attach herewith a Declaration from Claire Thaumazet (original French and English translation), who is an expert in the field of the hydrophobic coatings that was submitted in the granted corresponding European application (EP 1 720 808, copy attached). Ms. Thaumazet reproduced the hydrophobic coating as taught by Uemura and found that an ionized oxygen plasma treatment as described in Uemura cannot lead to the etching of a silicon containing layer as we instantly claim.

The comparative data presented in the specification demonstrates the improved nature of activation treatment of the silicon layer compared to the silicon layer not treated in this manner that would not have been reasonably expected from the teaching of Uemura with or without Okudaira.

More specifically, Uemura with or without Okudaira would not have lead a person skilled in the art to find and implement the process as described in the claimed invention because:

The cited art does not recognize nor provide a means to address the problem of obtaining hydrophobic coatings of improved durability, especially mechanical durability (see

page 1, lines 5-8 or page 2, line 1-13 of the present specification). The problem identified by the inventors and solved is to apply a manufacturing process that includes the placement of a silicon containing sublayer which is subjected, before the hydrophobic layer is deposited, to an activation treatment by as etching with a plasma of a fluorinated gas. As indicated in Example 1, especially in Table 3 and on page 14, lines 24-26 of the present application such a substrate has improved abrasion resistance properties under the various tests carried out.

Regarding Uemura's Example 2 and page 5, lines 36 to 48 indicate activation by a plasma comprising 10% oxygen, with insufficient disclosure to determine whether such an activation actually results in an etching of the surface of the SiO₂ sublayer or simply activation of the surface. The experiments carried out by the Applicant and presented in the attached Declaration have demonstrated, as indicated in the present specification (see page 7, lines 22-27), that an activation treatment with a gas such as oxygen does not result in etching. Furthermore, Mrs C. Thoumazet, who reproduced Example 2 of this application as faithfully as possible, that it is not possible to etch the SiO₂ sublayer described by using a simple oxygen plasma. Furthermore, even if it may be considered that the oxygen plasma treatment does actually result in etching of the sublayer, Uemura in no way directs a person skilled in the art towards an alternative use of a plasma of a fluorinated gas, possibly in combination with oxygen, in order to obtain such etching.

In view of the above, withdrawal of the rejection is requested.

U.S. application serial no. 10/590,197

Reply to the Official Action of October 1, 2010 and the Notice of April 18, 2011

Applicants respectfully submit that the above-identified application is now in
condition for allowance.

Respectfully Submitted,

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